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Newsletter

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EDITORIAL

Dear Healthcare Colleagues,

It brings me immense joy to reconnect with you, offering a multitude of articles for your exploration. In this edition, we place significant emphasis on drug safety, a topic of utmost importance. In an era of unprecedented medical advancements, drug safety remains paramount. Ensuring the well-being of patients is a shared responsibility, spanning pharmaceutical companies, healthcare professionals, regulatory bodies, and patients themselves. Pharmaceutical companies must rigorously test and monitor their products, putting safety above profits. Healthcare providers play a critical role in prescribing responsibly and educating patients about potential risks. Regulatory agencies must maintain stringent oversight and adapt swiftly to emerging threats. However, patients must also be proactive in understanding their medications, reporting adverse effects, and following prescribed regimens diligently. Collaboration among all stakeholders is essential to building a robust safety net. In this pursuit of drug safety, transparency and communication are key. Open dialogue, data sharing, and ongoing research are our allies. By embracing this collective commitment, we can ensure that medical progress continues hand in hand with patient protection, fostering a healthier and safer world for all.

I appreciate the efforts of the IPA Kerala State Branch and the editorial team in providing important information to the pharmacy community. Continuous education and dissemination of knowledge are crucial for optimizing medication use and ensuring patient safety. Your valuable suggestion would help us improve the quality of this publication.

Please write to “frontlinepharmacists@gmail.com

Best regards
Dr. Kiron SS

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THE ROLE OF PHARMACISTS IN ENSURING PATIENT SAFETY IN HEALTHCARE SERVICES

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The landscape of healthcare is vast, intricate, and ever-evolving. At its heart, the goal is unchanging: to ensure the safety and well-being of patients. Pharmacists, traditionally seen as dispensers of medicines, have seen their roles expand and diversify over the years. Today, they are indispensable members of the healthcare team, actively involved in patient care. This article delves into the myriad ways pharmacists contribute to patient safety in healthcare services.

1.Medication Management and Review:

Medication Therapy Management (MTM): MTM is a comprehensive, patient-centered approach to ensuring that medicines are used safely and effectively. Pharmacists review a patient's medication profile, identify any potential drug-drug, drug-feed or drug-disease interactions, and rectify discrepancies, such as inappropriate doses, inappropriate drug selections, drug-lab mismatch or over-prescribing.

Chronic Disease Management: Patients with chronic conditions like diabetes, hypertension, or asthma benefit from regular medication reviews. Pharmacists adjust doses, introduce new medications, or discontinue ones in collaboration with the care providers that may no longer be necessary, ensuring optimal therapeutic outcomes.

2. Drug Information Expertise:

Pharmacists are drug experts. They offer detailed insights into drug mechanisms, side effects, interactions, and more. Their knowledge is vital in:

Answering Patient Queries: Patients often have concerns about their medicines. Pharmacists can address these queries, ensuring that patients understand the why, what, and how of their medications.Supporting Clinical Decisions: Physicians often consult pharmacists on drug selection, dosage, and potential interactions. This collaboration ensures that the patient receives the best possible medication regimen.

3. Medication Reconciliation:

Whenever patients transition between healthcare settings, such as from hospital to home or vice versa, there's a risk of medication errors. Pharmacists ensure continuity of care through medication reconciliation, verifying that any changes made to a patient's medication regimen are accurate and intentional.

4.Adverse Drug Reaction (ADR) Monitoring:

Pharmacists play a pivotal role in monitoring and reporting ADRs. Recognizing and reporting these reactions not only ensures immediate patient safety but also contributes to the broader knowledge base, ensuring the safety of future patients.

5. Drug Compounding and Dispensing:

Pharmacists ensure that drugs are formulated and dispensed correctly. This includes:

Safe Preparation: Especially in settings like chemotherapy, IV reconstitution, total parenteral nutrition where precision is paramount, pharmacists ensure that drug preparations are accurate and sterile.

Labelling and Packaging: Clear instructions, appropriate packaging, and proper labelling prevent medication errors at the patient's end.

6. Public Health Roles:
Immunizations: Globally, many pharmacists are certified with the credentials to administer vaccines, playing a role in disease prevention.
Health Screenings: Pharmacists often conduct blood pressure checks, cholesterol screenings, and other preventive health services, identifying potential health risks.

7. Educating Patients:
Counselling and educating patients about their medications are vital. Pharmacists explain dosages, administration techniques, potential side effects, and what to do in case of missed doses. This direct interaction ensures that patients are equipped to use their medications safely and effectively.

8. Collaborative Care Model:
The collaborative care model brings together pharmacists, doctors, nurses, and other healthcare professionals. Regular meetings and discussions about patient cases lead to holistic care, with each professional offering their expertise, ensuring that the patient benefits from a well-rounded approach.

9. Technology Utilization:
Pharmacists use and often lead the adoption of technology like pharmacy automation, robotics, electronic health records (EHR), computerized physician order entry (CPOE), barcoding or radio frequency tagging. These systems reduce manual errors, ensure accurate dose calculations, track medication histories and appropriate and timely delivery of medications.

10. Continuous Professional Development:
Pharmacy is an evolving field. Pharmacists routinely undergo training and attend workshops to stay updated, ensuring that their practices are current and align with the latest evidence-based guidelines.

Conclusion:
The role of pharmacists in ensuring patient safety is multi-faceted and indispensable. As healthcare becomes increasingly complex, the expertise and dedication of pharmacists remain a cornerstone in ensuring that patients receive safe, effective, and comprehensive care. As they navigate the vast world of medications, drug interactions, and patient-specific needs, pharmacists ensure that every pill dispensed, every piece of advice given, and every interaction contributes to a safer healthcare environment.

SPECIAL FEATURE
NIPAH

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Overview: NIPAH virus (NiV) is an emerging zoonotic virus that causes infection in human and other animals. It can also be transmitted through contaminated food or directly between people. It causes a series of illnesses from asymptomatic infection to acute respiratory illness and fatal encephalitis.
In 1999 in, Malaysia the NIPAH virus infection was first reported, and in the year 2001 in Bangladesh few cases were reported. New cases have been reported every year since then. It has also been recognized periodically in eastern India.

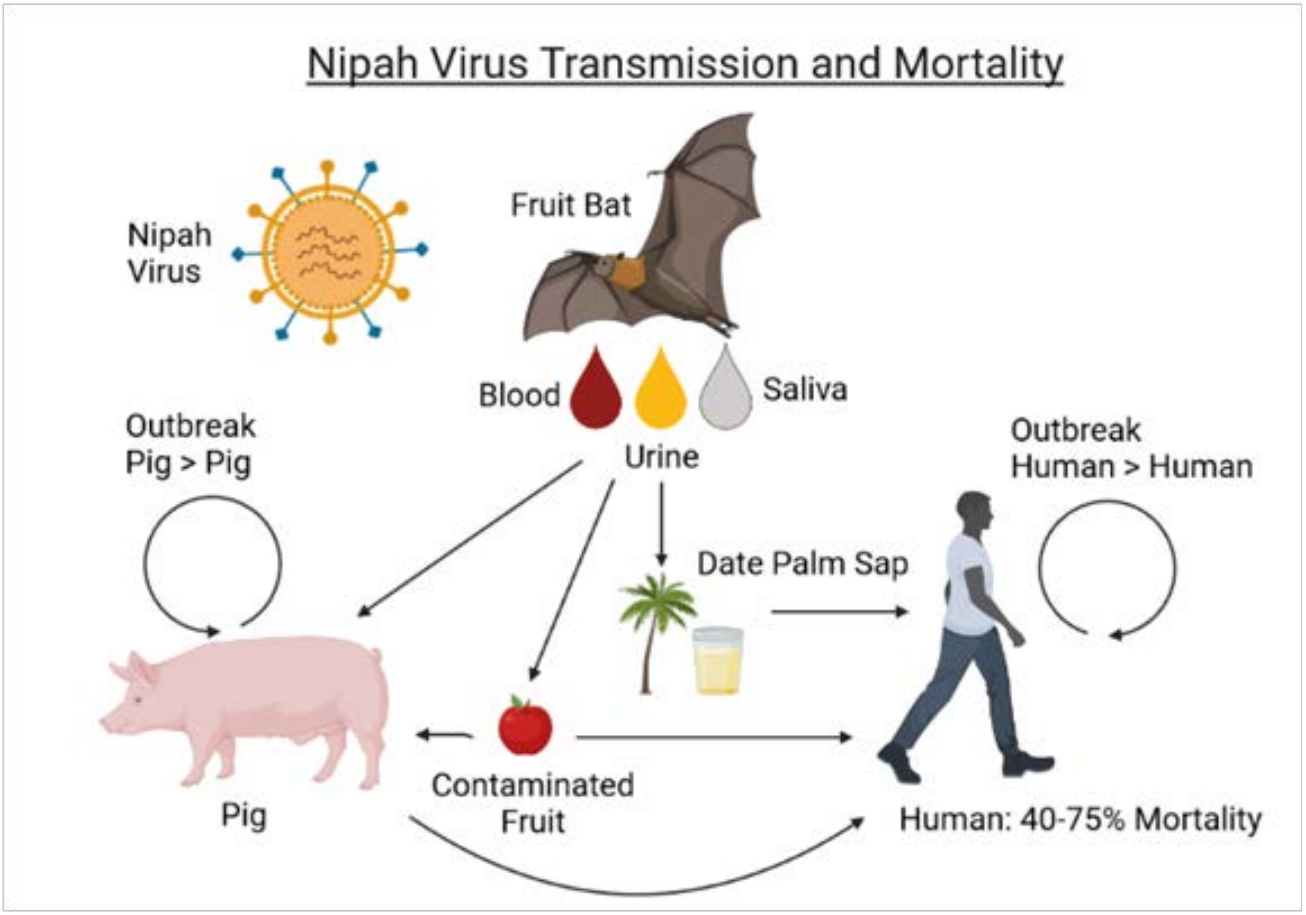

Image Courtesy, the Jenner Institute UK

Clinical features: The incubation period is between 4 and 18 days. In many cases the infection is mild or imperceptible. In symptomatic cases, the onset is usually with “influenza like” symptoms, with high fever and muscle pain. The disease may progress to inflammation of the brain (encephalitis) with drowsiness, disorientation, convulsions and coma. Around 50% of clinically apparent cases die.

Transmission: It is believed that transmission is done through unprotected contact to secretions from the pigs, or unprotected contact with the tissue of a sick animal. In Bangladesh and India, transmission was attributed to consumption of fruits or fruit products (such as raw date palm juice) contaminated with urine or saliva from infected fruit bats. There are currently no studies on viral persistence in bodily fluids or the environment including fruits. Human-to-human transmission of Nipah virus has also been reported among family and care givers of infected patients.

Signs and symptoms: Human infections are reportedly range from asymptomatic infection to acute respiratory infection (mild, severe), and fatal encephalitis. The incubation period is believed to range from 4 to 14 days. However, an incubation period as long as 45 days has also been reported. The case fatality rate is estimated at 40% to 75%.

Diagnosis: Nipah virus infection can be diagnosed with clinical history during the acute and convalescent phase of the disease. The main tests used are real time polymerase chain reaction (RT-PCR) from bodily fluids and antibody detection via enzyme-linked immunosorbentassay (ELISA).
Treatment: No drug therapies have yet been proved to be effective in treating Nipah infection. Treatment based on providing intensive supportive care is mostly accepted. Theories suggest that treatment with the antiviral drug Ribavirin can reduce both the duration of fever and the severity of disease. It is recommended that close contact with body fluids and infected tissues be avoided if Nipah infection is suspected.

Prevention
Controlling NIPAH virus in pigs
Currently, there are no vaccines available against Nipah virus. Based on the experience gained during the outbreak of Nipah involving pig farms in 1999, routine and thorough cleaning and disinfection of pig farms with appropriate detergents may be effective in preventing infection.
In areas where Nipah virus (NiV) outbreaks have occurred people should:
Practice hand washing regularly with soap and water
Avoid contact with sick bats or pigs
Avoid areas where bats are known to roost
Avoid eating or drinking products that could be contaminated by bats, such as raw date palm sap, raw fruit, or fruit that is found on the ground
Avoid contact with the blood or body fluids of any person known to be infected with NiV
Reducing the risk of infection in people
In the absence of a vaccine, the only way to reduce or prevent infection in people is by raising awareness of the risk factors and educating people about the measures they can take to reduce exposure to the Nipah virus.

Public health educational messages should focus on:
Reducing the risk of bat-to-human transmission.
Reducing the risk of animal-to-human transmission.
Reducing the risk of human-to-human transmission.
Controlling infection in health-care settings
Health-care workers caring for patients with suspected or confirmed infection, or handling specimens from them, should implement standard infection control precautions at all times
As human-to-human transmission has been reported, in particular in health-care settings, contact and droplet precautions should be used in addition to standard precautions. Airborne precautions may be required in certain circumstances.

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Comprehending Hepatitis: Causes Symptoms, and Prevention

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INTRODUCTION :

Hepatitis is a group of viral infections that affect the liver, and it is a significant public health concern.World Hepatitis Day, observed on July 28th each year, serves as a global platform to raise awareness about hepatitis and its impact on millions of people worldwide.

This brief article will delve into the basics of hepatitis, including its symptoms, types, and prevention.

WHAT IS HEPATITIS ?

Hepatitis refers to the inflammation of the liver, most commonly caused by viral infections. There are several types of hepatitis viruses, but the most common ones are hepatitis A, B, C, D, and E. Each type has its transmission methods, severity, and treatments. While they all cause liver disease, they differ in important ways including modes of transmission, severity of the illness, geographical distribution and prevention methods.

In particular, types B and C lead to chronic disease in hundreds of millions of people and together are the most common cause of liver cirrhosis, liver cancer and viral hepatitis-related deaths. An estimated 354 million people worldwide live with hepatitis B or C, and for most, testing and treatment remain beyond reach.

TYPES OF HEPATITIS

1. Hepatitis A: Typically transmitted through contaminated food or water, hepatitis A causes flu-like symptoms, including fever, fatigue, and jaundice. Vaccination is an effective prevention method.

2. Hepatitis B: This virus spreads through contact with infected blood, semen, or other bodily fluids. It can lead to chronic liver disease and even liver cancer. Vaccination is crucial for prevention.

3. Hepatitis C: Hepatitis C is often transmitted through blood-to-blood contact. It can result in chronic infection, leading to cirrhosis and liver cancer. Effective antiviral medications are available for treatment.

4. Hepatitis D: This is a rare form of hepatitis that only affects individuals already infected with hepatitis B. It can worsen the symptoms of hepatitis B.

5. Hepatitis E: Similar to hepatitis A, hepatitis E is typically transmitted through contaminated food or water. It is most common in areas with poor sanitation.

SYMPTOMS OF HEPATITIS

- Fatigue, - Jaundice (yellowing of the skin and eyes)

- Abdominal pain, - Nausea and vomiting,- Dark urine
- Joint pain- Loss of appetite

PREVENTION :

Preventing hepatitis primarily involves practicing good hygiene and safe sex, as well as getting vaccinated for hepatitis A and B. For hepatitis C, avoiding high-risk behaviors like sharing needles and practicing safe healthcare procedures are crucial steps in prevention.

HEPATITIS A

Improved sanitation, food safety and immunization are the most effective ways to combat hepatitis A.
The spread of hepatitis A can be reduced by:
Adequate supplies of safe drinking water
Proper disposal of sewage within communities; and
Personal hygiene practices such as regular handwashing before meals and after going to the bathroom.

HEPATITIS B

Practice safe sex by using condoms and reducing the number of sexual partners
Avoid sharing needles or any equipment used for injecting drugs, piercing, or tattooing
Wash your hands thoroughly with soap and water after coming into contact with blood, body fluids, or contaminated surfaces
Get a hepatitis B vaccine if working in a healthcare setting.

HEPATITIS C

Safe and appropriate use of healthcare injections
Safe handling and disposal of needles and medical waste
Harm-reduction services for people who inject drugs, such as needle exchange programs, substance use counselling and use of opiate agonist therapy (OAT)
Testing of donated blood for the hepatitis C virus and other viruses
Training of health personnel
Practicing safe sex by using barrier methods such as condoms.

HEPATITIS D

Prevention of HBV transmission through hepatitis B immunization, including a timely birth dose, additional antiviral prophylaxis for eligible pregnant women, blood safety, safe injection practices in health care settings and harm reduction services with clean needles and syringes are effective in preventing HDV transmission. Hepatitis B immunization does not provide protection against HDV for those already infected with HBV.

HEPATITIS E

Maintaining quality standards for public water supplies; and establishing proper disposal systems for human faeces.
On an individual level, infection risk can be reduced by:maintaining hygienic practices avoiding consumption of water and ice of unknown purity.

TREATMENT

The medications used to treat hepatitis vary depending on the type of hepatitis and its severity. Here are some common medications for different types of hepatitis:

1.Hepatitis A:
There is no specific antiviral medication for Hepatitis A. Treatment mainly focuses on supportive care, such as rest, hydration, and avoiding alcohol and certain medications that can affect the liver. Most people with Hepatitis A recover on their own without the need for medication.

2. Hepatitis B: Antiviral medications are often used to treat chronic Hepatitis B infections. Some common antiviral drugs include:
Entecavir,Tenofovir, Lamivudine, Adefovir, Telbivudine

3. Hepatitis C: Hepatitis C is typically treated with a combination of antiviral medications known as direct-acting antivirals (DAAs). Some examples of DAAs used to treat Hepatitis C include:
- Sofosbuvir, Ledipasvir, Velpatasvir, Daclatasvir, Ribavirin

4. Hepatitis D:
Hepatitis D is a rare and severe form of hepatitis that only occurs in people who are already infected with Hepatitis B. The treatment for Hepatitis D often involves managing the Hepatitis B infection and sometimes using antiviral medications.

5. Hepatitis E:
Similar to Hepatitis A, Hepatitis E usually resolves on its own without specific antiviral treatment. Supportive care, such as hydration and rest, is typically recommended.

WHAT'S NEW?

Updated recommendations on treatment of adolescents and children with chronic HCV infection, and HCV simplified service delivery and diagnostics.

Overview

Hepatitis C virus (HCV) infection is a major public health problem and cause of chronic liver disease that leads to approximately 399 000 deaths annually. In 2019, only 21% of the 58 million persons with chronic HCV infection had been diagnosed, and 13%, treated. These guidelines provide updated evidence-based recommendations on the priority HCV-related topics from the 2018 WHO Guidelines for the care and treatment of persons diagnosed with chronic hepatitis C infection and the 2017 WHO Guidelines on hepatitis B and C testing.

These priority areas are:
1. direct-acting antiviral (DAA) treatment of adolescents and children ages ≥3 years of age
2. simplified HCV service delivery (decentralization, integration and task sharing)
3. HCV diagnostics – use of point-of-care (POC) HCV ribonucleic acid (RNA) assays and reflex HCV RNA testing.

CONCLUSION:

Hepatitis is a global health issue that affects millions of people. World Hepatitis Day serves as a reminder of the importance of understanding this disease, getting vaccinated, and taking preventive measures. By raising awareness and taking action, we can work towards reducing the burden of hepatitis worldwide.

DRUG PROFILE

1. FINERENONE

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Indication: Finerenone is used in chronic kidney disease associated with Type 2 Diabetes. It is used to reduce the risk of sustained eGFR decline, end-stage kidney disease, cardiovascular death, nonfatal myocardial infarction, and hospitalization for heart failure in adult patients with chronic

kidney disease associated with type 2 diabetes.
Dosing in Chronic kidney disease - Type 2 diabetes mellitus
• Prior to initiation: If serum potassium level is greater than 4.8 to 5 mEq/L, initiation of therapy may be considered with additional serum potassium monitoring within the first 4 weeks based on clinical judgment and serum potassium levels
• Estimated GFR (eGFR) 60 mL/min/1.73 m2 or greater: Initial, 20 mg orally once daily; titration, measure serum potassium 4 weeks after initiating treatment and maintain 20 mg daily for serum potassium up to 5.5 mEq/L; adjust dose as needed based on serum potassium obtained 4 weeks after a dose adjustment, and periodically throughout treatment
• eGFR 25 to less than 60 mL/min/1.73 m2: Initial, 10 mg orally once daily; titration, measure serum potassium 4 weeks after initiating treatment and increase dose to 20 mg daily for serum potassium 4.8 mEq/L or less. Maintain 10 mg daily dose for serum potassium greater than 4.8 to 5.5 mEq/L. For serum potassium 4.8 mEq/L or less with eGFR, decrease by more than 30% over previous measurement, maintain 10 mg/day dosage. Adjust dose as needed based on serum potassium obtained 4 weeks after a dose adjustment, and periodically throughout treatment.
• Serum potassium 5.5 mEq/L or greater: Withhold finerenone. For patients who were receiving the 20 mg/day dose, restart at 10 mg once daily when serum potassium is 5 mEq/L or less. For patients who were receiving the 10 mg/day dose, consider restarting at 10 mg daily when serum potassium is 5 mEq/L or lower.
Hepatic Impairment (Adult): No dosage adjustment necessary in mild to moderate impairment. Avoid use in severe impairment: (Child-Pugh class C).
Paediatric patients: Safety and efficacy not established.
Mechanism of Action: Finerenone is a nonsteroidal, selective antagonist of the mineralocorticoid receptor (MR), which is activated by aldosterone and cortisol and regulates gene transcription. Finerenone blocks MR mediated sodium reabsorption and MR overactivation in both epithelial (e.g., kidney) and nonepithelial (e.g., heart, and blood vessels) tissues. MR overactivation is thought to contribute to fibrosis and inflammation. Finerenone has a high potency and selectivity for the MR and has no relevant affinity for androgen, progesterone, estrogen, and glucocorticoid receptors.
Precautions: Hyperkalemia may occur more frequently in patients with decreasing kidney function and in patients with higher baseline potassium levels or other risk factors for hyperkalemia. Monitoring recommended and dose adjustments may be necessary.

Adverse Effects:
Endocrine & metabolic: Hyperkalemia (14%), Hyponatremia (1%)

Cardiovascular:
Hypotension (5%)
Allergy and Idiosyncratic Reactions: Mineralocorticoid Receptor Antagonist Allergy
Drug-drug Interactions: Finerenoneinteracts with concomitant angiotensin-converting enzyme inhibitors, angiotensin-II receptor blockers, nonsteroidal anti-inflammatory drugs, and CYP3A inhibitors.

Drug-Food Interaction:
Grapefruit juice increases finerenone concentrations. Avoid concomitant use with grapefruit juice.
Drug-Disease interactions: Adrenal insufficiency, hepatic impairment, hyperkalemia.

Pharmacokinetics:
Time to peak: 0.5-1.25 hrs. Bioavailability: 44%. Volume of distribution: 52.6 L. Protein binding: 92%; primarily to albumin. Metabolism: Primarily hepatic via CYP3A4 (90%) and to a lesser extent by CYP2C8 (10%) to inactive metabolites. Elimination Half-life: Terminal: 2 to 3 hours. Time to peak: 0.5 to 1.25 hours. Excretion: Renal 80% (<1% as unchanged) and faecal 20% (<0.2% as unchanged).

Storage: Store at 20°C to 25°C

Medication Counselling:
Advise patients to report if have any of the following signs or symptoms that may be related to a very bad side effect:
High potassium levels like a heartbeat that does not feel normal; feeling confused; feeling weak, lightheaded, or dizzy; feeling like passing out; numbness or tingling; or shortness of breath.

Signs of an allergic reaction, like rash; hives; itching; red, swollen, blistered, or peeling skin with or without fever; wheezing; tightness in the chest; trouble breathing, swallowing, or talking; swelling of the mouth, face, lips or tongue.
Warn patient to avoid use of potassium supplements and salt substitutes containing potassium.
Counsel patient to avoid grapefruit or grapefruit juice.
Instruct patient to take a missed dose as soon as possible on the same day. If this is not possible, skip the missed dose and continue with the next dose.

2. DAPRODUSTAT

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Indication: Daprodustat is a tablet that is used orally. A hypoxia-inducible factor prolyl hydroxylase (HIF-PH) inhibitor is indicated for the treatment of anemia due to chronic kidney disease in adults who have been receiving dialysis for at least four months. The hypoxia-inducible factor (HIF)-prolyl hydroxylase domain (PHD) pathway regulates cellular responses to hypoxia and is involved in multiple diseases, including anemia, polycythemia, ischemic diseases, pulmonary arterial hypertension, and cancer.

Brand Name: JESDUVROQ
Class: Hypoxia-Inducible Factor Inhibitors
Dosage and Administration Individualize dosing and use the lowest dose of JESDUVROQ sufficient to reduce the need for red blood cell transfusions. Do not target hemoglobin higher than 11 g/dL. It can be taken with or without food, without regard to concomitant administration of iron or phosphate binders. Tablets should not be cut, crushed, or chewed. If a dose is missed, it should be taken as soon as possible, unless it is the same day as the next dose. In this case, the missed dose should be skipped, and the next dose should be taken at the usual time. Double doses should not be taken to make up for a missed dose. The starting dose of JESDUVROQ for adults on dialysis not receiving an erythropoiesis-stimulating agent based on pre-treatment hemoglobin (Hb) level is given below:

Hemoglobin level	Dose	Route	Dose interval
<9 g/dL	4 mg	PO	ONCE DAILY
9-10 g/dL	2 mg	PO	ONCE DAILY
>10 g/dL	1 mg	PO	ONCE DAILY

Dosage form and strength:
1 mg, grey, biconvex, round film-coatedtablets debossed with “GS KF” on oneface
2 mg, yellow, biconvex, round film-coated tablets debossed with “GS V7” on one face
4 mg, white, biconvex, round film-coatedtablets debossed with “GS 13” on oneface.
6 mg, pink, biconvex, round film-coatedtablets debossed with “GS IM” on oneface
8 mg, orange, biconvex, ,round film-coated tablets debossed with “GS 5E” on one face.

Mechanism of Action: Daprodustat is a reversible inhibitor of HIF-PH1, PH2, and PH3. This activity results in the stabilization and nuclear accumulation of HIF-1αand HIF-2αtranscription factors, leading to increased transcription of the HIF-responsive genes, including erythropoietin. Pharmacokinetics: steady-state concentrations are achieved within 24-hours of dosing. After oral administration, Daprodustat is readily absorbed, with the median time to peak concentration (Tmax) in healthy humans ranging from 1 hour to 4 hours. The absolute bioavailability of Daprodustat is 65%. Daprodustat has an approximately equal distribution between plasma and blood cells. Following intravenous dosing, the volume of distribution at steady state in a healthy human is 14.3 L. The terminal elimination half-life of Daprodustat is approximately 1 to 4 hours. Following oral or intravenous administration of radiolabeled Daprodustat to healthy adults, approximately 40% of the total circulating radioactivity in plasma was due to Daprodustat, and the remaining 60% was metabolites. The mean clearance from plasma was 18.9 L/h, which correlates to a blood clearance of 15 L/h and equates to a hepatic extraction of approximately 18%. Within seven days of an oral dose of radiolabeled daprodustat, 74% of the radioactivity was recovered in the feces and 21% in the urine. Approximately 99.5% of the dose was excreted as oxidative metabolites, with the rest accounting for bydaprodustat. Pharmacodynamics: Daprodustat increases endogenous erythropoietin in a dose-dependent manner within 6 to 8 hours after administration. With repeat doses, peak increases in reticulocyte counts occur between 7 and 15 days, with subsequent increases in red blood cell production. New hemoglobin steady-state levels are reached several weeks (approximately 4 weeks in ESA-users and approximately 16–20 weeks in ESA-non-users) after initial administration. Daprodustat increased serum transferrin and total iron binding capacity (TIBC) and decreased serum ferritin, transferrin saturation, and hepcidin when administered for 52 weeks in adults on dialysis with anemia due to CKD. Adverse reactions: The adverse reactions are increased risk of death, myocardial infarction, stroke, venous thromboembolism, and thrombosis of vascular access. Risk of Hospitalization for Heart Failure, Hypertension, and Gastrointestinal Erosion Contraindication: In pregnancy, it may cause fetal harm to persons with severe hepatic impairment, patients receiving a strong CYP2C8 inhibitor such as gemfibrozil, and persons with uncontrolled hypertension. Patient Counseling Information: advise patients about the increased risks of death, myocardial infarction, stroke, venous thromboembolism, thrombosis of vascular access, heart failure, and hypertension. They have to undergo regular blood pressure monitoring and should adhere

to the prescribed anti-hypertensive regimen. If there is a risk of gastric erosion, gastrointestinal bleeding, and other associated symptoms and signs, report it to their healthcare provider. They need to undergo regular laboratory tests for hemoglobin and inform their healthcare provider if they are taking strong CYP2C8 inhibitors, including gemfibrozil or moderate CYP2C8 inhibitors. In pregnancy, this drug may cause fetal harm. Advise mothers not to breastfeed during treatment with JESDUVROQ and for one week after the final dose.

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INDIVIDUAL CASE SAFETY REPORT

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AMOTRIGINE-INDUCED STEVENS JOHNSON SYNDROME (SJS)

Steven Johnson syndrome is a rare but cutaneous adverse reaction characterized by mucocutaneous involvement, including skin rashes, blistering, and mucosal lesions. Several medications, including antiepileptic drugs, have been associated with Steven Johnson syndrome (SJS). This case report presents the clinical course of a 45-year-old female patient with a history of depression and hypothyroidism who developed a severe cutaneous adverse reaction, specifically Steven Johnson syndrome, attributed to the initiation and subsequent dose escalation of lamotrigine, an antiepileptic medication. The patient's symptoms included rashes, itching, mouth sores, and throat pain, which led to her hospitalization. Dermatological consultation confirmed the diagnosis of SJS, prompting the discontinuation of lamotrigine. Further research and awareness regarding potential drugs and drug interactions contributing to SJS are warranted to enhance patient safety.

ESOMEPRAZOLE-INDUCED GALACTORRHEA

Esomeprazole is a proton pump inhibitor (PPI) used to reduce stomach acid production and treat conditions like gastroesophageal reflux disease (GERD) and peptic ulcers. Galactorrhea, a condition characterized by the spontaneous discharge of milk from the breasts, is unrelated to breastfeeding. An 18-year-old female with symptoms of gastroesophageal reflux disease was given esomeprazole 20mg to relieve the symptoms of GERD. Later, she complained about white discharge from the breast; galactorrhea was resolved after quitting the medication. It was hypothesized that esomeprazole has a slight inhibitory impact on CYP3A4, which results in a reduction in the metabolism of estrogen and raises blood estrogen levels. Galactorrhea develops as a result of estrogen stimulation, which causes the release of prolactin.

Navigating Recent Drug Introductions in The Indian Market: Medication Counseling For Patient Safety

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The Central Drugs Standard Control Organization (CDSCO) has introduced 21 novel drugs to the Indian market this year. In this article, we focus primarily on the key points for effectively counseling patients about some of these medications.

Fesoterodine fumarate extended-release tablet (4mg and 8mg strengths) is indicated for the treatment of overactive bladder with symptoms of urinary frequency and urge incontinence. Patients should avoid activities requiring mental alertness or coordination until drug effects are realized, as this drug may cause dizziness and drowsiness. Heat prostration may occur when a drug is used in a hot environment. This drug may cause dry mouth, constipation, dry eyes, and urinary retention. Advise the patient that alcohol may enhance the drowsiness caused by this drug. Do not crush or chew the extended-release tablets, as they may release the drug too quickly, leading to adverse effects. The tablets should be swallowed whole with water and can be taken with or without food. Side effects include blurred vision and angioedema of the face, lips, and tongue, which can be life-threatening. The patient should be advised to promptly discontinue therapy and immediately contact a healthcare professional if angioedema occurs. Prussian Blue Insoluble 340 mg and Magnesium Hydroxide 500 mg capsules, approved as decorporation agents, are indicated for the treatment of patients with known or suspected internal contamination with radioactive cesium and/or radioactive or non-radioactive thallium to increase their rates of elimination. Patients should be advised that stools may be blue-tinted during therapy. Instruct the patient on proper handling and disposal of bodily fluids and waste during drug therapy to minimize radiation exposure to others. Whenever possible, patients should use a toilet instead of a urinal. Flush several times after each use. Side effects may include constipation. Instruct the patient to take the drug with food to stimulate the excretion of cesium or thallium.

Cannabidiol Oral Solution 100 mg/mL, approved in April 2023, is indicated for the treatment of seizures associated with Lennox-Gastraut syndrome, Dravet syndrome, or tuberous sclerosis complex in patients 1 year of age and older. Warn patients to avoid activities requiring mental alertness or coordination, as this drug may cause somnolence or sedation. Instruct the patient to report worsening depression, suicidal ideation, or unusual changes in behavior. Side effects may include decreased appetite, diarrhea, fatigue, malaise, rash, insomnia, and infections.

Instruct the patient to report symptoms of hepatic dysfunction. Advise the patient against sudden discontinuation of the drug due to the potential for increased seizures or status epilepticus.

Niraparib Tablet 100mg is indicated as monotherapy for the maintenance treatment of adult patients with advanced epithelial high-grade ovarian, fallopian tube, or primary peritoneal cancer who are in response following completion of first-line platinum-based chemotherapy. Side effects include black stools or blood in urine, lower back pain, fever, and bleeding gums. Advise the patient to be careful when using a regular toothbrush, dental floss, or toothpick; to be careful not to cut themselves when using sharp objects such as a safety razor or fingernail or toenail cutters; and to avoid contact sports or other situations where bruising or injury could occur.

Dalbavancin hydrochloride injection (500mg strength) is indicated for the treatment of adult patients with acute bacterial skin and skin structure infections caused by susceptible isolates of the following Gram-positive microorganisms: Staphylococcus aureus, including methicillin- and methicillin-resistant strains; Streptococcus pyogenes; Streptococcus agalactiae; Streptococcus dysgalactiae; Streptococcus anginosus; Streptococcus anginosus; and Enterococcus faecalis (vancomycin-sensible strains). Side effects include back pain, black, tarry stools, bleeding gums, blood in the urine or stools, chest pain or tightness, chills, clay-colored stools, and coughing.

Plecanatide tablets (3 mg) were approved for chronic idiopathic constipation and irritable bowel syndrome with constipation. Warn the patient to report severe diarrhea. Side effects may include abdominal distension or tenderness, flatulence, sinusitis, and upper respiratory infections. Advise the patient to swallow the tablet whole or crush it and administer it with a teaspoon of apple sauce or 30 mL of water. Swallow the mixture immediately, and do not store it for future use. Treprostinil Solution for Infusion (1 mg/mL and 10 mg/mL) approved in July 2023, is indicated for the treatment of idiopathic or heritable pulmonary arterial hypertension. Injection side effects may include subcutaneous infusion site reactions and pain, diarrhea, headache, jaw pain, and nausea. Warn the patient to report symptoms of bleeding. Side effects may include headaches, diarrhea, nausea, and flushing. Advise the patient against sudden discontinuation due to the potential for worsening pulmonary hypertension symptoms. Instruct the patient to take the drug with food.

There were other newly introduced drugs on the market, including Polmacoxib Capsule 2mg for idiopathic osteoarthritis of the hip or knee, Sovateltide Injection (30 µg) for Cerebral Ischemic Stroke, Imeglimin Hydrochloride Tablet 500mg/1000mg for Type 2 Diabetes Mellitus and Lobeglitazone Sulfate 0.5mg+Glimepiride 1mg Tablets as an adjunct in adults with type 2 diabetes mellitus who are already treated with thiazolidinedione and sulphonyl urea. Lifitegrast Ophthalmic Solution 5% w/v is indicated for the treatment of signs and symptoms of dry eye disease (DED). Injection Remifentanil Hydrochloride 1 mg/2 mg is an analgesic agent for use during the induction and maintenance of general anesthesia for inpatient and outpatient procedures. Certain topical applications, like Trifarotene 50 microgram/g (0.005% w/w) cream for cutaneous treatment of acne vulgaris of the face and trunk in patients 12 years of age and older and Crisaborole Ointment 2% for mild to moderate atopic dermatitis in adult and pediatric patients of 2 years and older, were also approved.

US FDA APPROVED DRUGS 2023:

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SUSPECTED DRUG	ACTIVE INGREDIENT	USAGE	DATE
LEQEMBI	LECANEMAB-IRMB	To treat Alzheimer's disease	06/01/2023
BRENZAVVY	BEXAGLIFLOZIN	To improve glycemia control in Type-2 Diabetes Mellitus, adjacent to diet and exercise	20/01/2023
JAYPIRCA	PIRTOBRUTINIB	Relapsed or refractory mantle cell lymphoma in adults who had at least two lines of systematic therapy	27/01/2023
ORSERDU	ELACESTRANT	To treat estrogen receptor positive, human epidermal growth factor receptor 2 negative, ESR-1 mutated, advanced or metastatic breast cancer	27/01/2023
JESDUVROQ	DAPRODUSTAT	To treat anemia caused by chronic kidney disease for adults on dialysis for at least four months	01/02/2023
LAMZEDE	VELMANASE ALFA-TYCV	To treat non-central nervous system manifestations of alpha-mannosidosis	16/02/2023
FILSPARI	SPARSENTAN	To reduce proteinuria in adults with primary immunoglobulin A nephropathy	17/02/2023
SKYCLARYS	OMAVELOXOLONE	To treat Friedrich's ataxia	28/02/2023
ZAVZPRET	ZAVEGEPANT	To treat Migraine	09/03/2023
DAYBUE	TROFINETIDE	To treat Rett syndrome	10/03/2023
ZYNYZ	RETIFANLIMAB-DLWR	To treat metastatic or recurrent locally advanced Merkel cell carcinoma	22/03/2023
REZZAYO	REZAFUNGIN	To treat candidemia and invasive candidiasis	22/03/2023
JOENJA	LENIOLISIB	To treat activated phosphoinositide 3-kinase delta syndrome	24/03/2023

QALSODY	TOFERSEN	To treat amyotrophic lateral sclerosis in adults who have a S0D1 gene mutation	25/04/2023
ELFABRIO	PEGUNIGALSIDASE ALFA-IWXJ	To treat Fabry disease	09/05/2023
VEOZAH	FEZOLINETANT	To treat moderate to severe hot flashes caused by menopause	12/05/2023
MIEBO	PERFLUORHEXYLOCTANE	To treat signs and symptoms of dry eye disease	18/05/2023
EPKINLY	EPCORITAMAB-BYSP	To treat relapsed or refractory diffuse large B-cell lymphoma and high-grade b-cell lymphoma	19/05/2023
XACDURO	SULBACTAM, DURLOBACTAM	To treat hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia caused by susceptible isolates of Acinetobacterbaumannii-calcoaceticus complex	23/05/2023
PAXLOVID	NIRMATRELVIR, RITONAVIR	To treat mild to moderate COVID-19 in adults at high risk for progression to severe COVID-19	25/05/2023
POSLUMA	FLOTUFOLASTAT F 18	To use with positron emission tomography imaging in patients with prostate cancer	25/05/2023
INPEFA	SOTAGLIFLOZIN	To treat heart failure	26/05/2023
COLUMVI	GLOFITAMAB-GXBM	To treat diffuse large B cell lymphoma	15/06/2023
LITFULO	RITLECITINIB	To treat severely patchy hair loss	23/06/2023
RYSTIGGO	ROZANOLIXIZUMAB-NOLI	To treat generalized Myasthenia gravis in adults who are anti-acetylcholine receptor or anti-muscle-specific tyrosine kinase antibody positive	26/06/2023
NGENLA	SOMATROGON-GHLA	To treat growth failure due to inadequate secretion of endogenous growth hormones	27/06/2023
BEYFORTUS	NIRSEVIMAB-ALIP	To prevent respiratory syncytial virus lower respiratory tract disease	17/07/2023
VANFLYTA	QUIZARTINIB	For treatment regimen for newly diagnosed acute myeloid leukemia	20/07/2023
XDEMVY	LOTILANER	To treat Demodexblepharitis	25/07/2023
ZURZUVAE	ZURANOLONE	To treat postpartum depression	04/08/2023
IZERVAY	AVACINCAPTAD PEGOL	To treat geographic atrophy secondary to age related macular degeneration	04/08/2023
TALVEY	TALQUETAMAB-TGVS	To treat adults with relapsed or refractory who have received at least four prior therapies	09/08/2023
ELREXFIO	ELRANATAMAB-BCMM	To treat adults with relapsed or refractory multiple myeloma	14/08/2023

SOHONOS	PALOVAROTENE	To reduce volume of new heterotopic ossification in adults and paediatric patients with fibrodysplasis ossification progressive	16/08/2023
VEOPOZ	POZELIMAB-BBFG	To treat patients 1years old with CD55-deficient protein losing enteropathy- CHAPLE disease	18/08/2023
APHEXDA	MOTIXAFORTIDE	To use with G-CSF to mobilize hematopoietic stem cells to the peripheral blood for collection and subsequent autologous transplantation in patients with multiple myeloma	08/09/2023
OJJAARA	MOMELOTINIB	To treat intermediate or high-risk myelofibrosis in adults with anemia	15/09/2023

DRUG SAFETY ALERT 2023 -ISSUED BY IPC

SUSPECTED DRUG	INDICATIONS	ADR	DATE
AMPHOTERICIN B (LIPOSOMAL)	Febrile neutropenia in cancer patients Invasive fungal infections Indications for the treatment of visceral leishmaniasis	Hearing disorder, Tachycardia	31/01/2023
CEPHALOSPORINS	Used to manage a wide range of infections from Gram-positive and Gram-negative bacteria	Purpura	20/02/2023
AMIKACIN	Treatment of serious infections due to amikacin sensitive organisms	Vision blurred	20/02/2023
METOPROLOL	Treatment of essential Hypertension in adults	Hyponatraemia	29/03/2023
NEBIVOLOL	Treatment of essential Hypertension in adults	Hyperkalaemia	29/03/2023
OLMESARTAN	Use as an Anti-hypertensive	Muscle spasm, Taste Disorder	29/03/2023
SULFASALAZINE	Use for the treatment of severe rheumatoid arthritis,Ulcerative colitis, Crohn's diseases	Visual Impairment	29/03/2023
LEVOSULPIRIDE	Treatment of depression and schizophrenia, treatment of different GI problems	Restless Legs Syndrome (RLS)	31/05/2023
TENELIGLIPTIN	Treatment of Type-2 Diabetes Mellitus as a monotherapy adjunct to diet and exercise	Bullous Pemphigoid	22/06/2023
COLISTIMETHATE SODIUM	Treatment of serious infections caused by Gram-negative bacteria	Bartter's like Syndrome Deep Vein Thrombosis	28/07/2023

LEVONORGESTREL	Used as emergency contraceptive, control of fertility	Hyperprolactinaemia	22/08/2023
ESOMEPRAZOLE	GERD, erosive reflux esophagitis, Zollinger-Ellison Syndrome, gastric and duodenal ulcer		27/08/2023

Practise Questions

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1. Type A pharmacological class of Adverse Drug Reaction stands for
   A. Bizzare
   B. Augmented
   C. Delayed
   D. Continuous drug use

2. The Pharmacovigilance Programme of India (PvPI), coordinated by the Indian Pharmacopeia Commission, is situated at
   A. Calcutta
   B. Mumbai
   C. Ghaziabad
   D. Jaipur

3. Which one of the following comprise primary drug information resource?
   A. Review and research articles
   B. Major compendia
   C. EMBASE and MEDLINE
   D. Clinical research study reports.

4.TheUppsalaMonitoring Center is located in which of the following country?
   A. China
   B. Japan
   C. Sweden
   D. India

5.CROs stand for:
- A. Contract Research organizations
- B. Collection Review Organisations
- C. Contract Review Organisations
- D. Collective Research Organisations

6. Targeted clinical investigations required
- A. FDA Approval
- B. WHO Approval
- C. PvPi Approval
- D. NDA Approval

7. WHO-ART has
- A. 1 levels hierarchical structure
- B. 4 levels hierarchical structure
- C. 2 levels hierarchical structure
- D. 3 levels hierarchical structure

8. Indian Pharmacovigilance system is regulated by –
- A) USFDA
- B) CDSCO.
- C) IPC.
- D) DRDO

9. NDA stands for
- A) New drug applicant
- B) Novel drug application
- C) New device application
- D) New drug application

10. Sulfanilamide disaster occurred in
- A) 1938
- B) 1948
- C) 1958
- D) 1948

Please refer the answer key on page number 27

IPA KERALA STATE - ASSOCIATION NEWS

One-day workshop on Student- Centric Teaching Methodology

The Indian Pharmaceutical Association Kerala state branch and the Mar Dioscorus College of Pharmacy, Thiruvananthapuram, organized a workshop on "Student-Centric Teaching Methodology" on August 1, 2023. The faculty members from Mar Dioscorus College, Ezhuthachan College of Pharmacy, Dale View College of Pharmacy and Research Centre, MGM Silver Jubilee College of Pharmacy, and AJ College of Pharmacy attended the one-day workshop.

Dr.Preeja G. Pillai, Principal of Mar Dioscorus College of Pharmacy, welcomed the gathering. The inaugural ceremony was presided over by Dr.Jayasekhar, President of IPA's Kerala state branch. Dr. KS Anil Kumar, Registrar, University of Kerala, inaugurated the workshop by lighting the lamp. In his speech, he highlighted features of the National Education Policy 2020 and the need for a student-centric teaching and learning process. He urged the faculty to adopt technology-enabled teaching techniques and inspire the students to be critical thinkers, innovators, and leaders. Rev. Dr. Joseph Samuel Karugail, co-episcopal, PRO of the college, gave the felicitation, and Prof. Rachel Mathew propelled the vote of gratitude. Dr. P. Jayasekhar gave an overview of the workshop and emphasized the significance of student-centric teaching methodologies like Flip Classroom and problem-based teaching in the pharmacy program. He said that as a part of the faculty development program, the state branch would organize such workshops in all regions with the support of eminent experts from the College of Education.

The topic for the first scientific session was "Fundamentals of Teaching: Educational Guidance and Motivation" by Dr.Divya C. Senan, Professor, Department of Education, University of Kerala. The session was chaired by Ms.Vani V, Associate Professor, MarDioscorus College of Pharmacy. She outlined the objectives, learning experience, and evaluation of outcomes-based education. She commented on the need for the higher order of Bloom's taxonomy in the teaching-learning process, like analysis, evaluation, and creativity. Then, several domains,

including cognitive, affective, and psychomotor learning, were discussed with examples.

The next session resource person was Dr.Vinod Chandra S.S., Professor, Department of Computer Science, University of Kerala, and the topic for the session was "Technology-enabled teaching—student-cantered teaching—Flip class". The session was chaired by Ms.Snesha, Assistant Professor, MarDioscorus College of Pharmacy. He also gave us an idea about ICT (Information Communication Technology), followed by the information society, knowledge society, and competition society, and also about the didactic relation model. The tools used for research include LMS (Learning Management System), MOOCs (Massive Open Online Courses), Latex, Harvard Graphics, Open Office Impress, Visme and Prezi (Presentation Tools), Overleaf, Amazon Poly, Chat GPT, Gradscope, and many more.

The last session on team building and teaching was presented by Dr. K. S. Chandrasekhar, Senior Professor, Institute of Management in Kerala, University of Kerala. The session was chaired by Ms. Lexhmi S Panicker, Assistant Professor, MarDioscorus College of Pharmacy. The resource person mentioned the need for team building in the teaching-learning process and the value of collaboration. To emphasize the value of teamwork, many exercises were conducted, and quotes from different illustrious individuals were also discussed. The delegated were given certificates of training, and they appreciated IPA for organizing such a useful workshop.

Community Outreach Campaign on "Safe and Proper Use of medicines" in Kerala State

The Community Pharmacy Forum of the Indian Pharmaceutical Association, with the support of the Paravur Block Panchayat, conducted an awareness seminar about "Safe and Proper Use of Medicines on July 29, 2023, in the Paravur Block Jubilee Hall. The seminar was inaugurated by Smt. SimnaSanthosh, President, Block Panchayat, and the function was presided over by Sri. KS. Saneesh, Vice President of the Block Panchayat. They expressed the need for public awareness about the safe and proper use of medicines. Mrs. PP. Asha, pharmacist, and Neethi Store Paravur welcomed the gathering. The interactive seminar was conducted by Mr. MP George, former drug controller and vice president of IPA, and Mrs. Antriya Annie Tom, associate

professor of pharmacy practice at Nirmala College of Pharmacy. More than 200 people, mostly Asha workers, the public, and patients, participated in the program. The participants raised doubts about the storage conditions of medicines, handling of expired medicines, drug interactions, and proper use of medication for lifestyle diseases like diabetes, hypertension, asthma, etc., and the panelists explained all queries nicely. In the open session, the participants thanked the IPA for such a useful session and requested to continue such awareness campaigns in the future as well. Dr. Vinod Paulose and Mrs. Sabitha Dileep felicitated the program, and Smt. N. Bindu proposed the vote of thanks.

One-day Workshop on Good Pharmacy Practice and Certificate Awarding Ceremony

The Indian Pharmaceutical Association, Kerala state branch, organized a workshop on pharmacy practice for the working pharmacists. Pharmacy Practice Workshop on July 23, 2023 Dr. John Joseph, Hon. Secretary, IPA, welcomed the gathering. Mrs. Remya Gayathri, Assistant Professor of Pharmacy Practice, Chemist College of Pharmacy, Kochi, was the master of the ceremony.

A talk on "Pharmacovigilance and ADR Reporting by Pharmacists" was delivered by Ms.Antriya Annie Tom, Associate Professor of Pharmacy Practice, Nirmala College of Pharmacy, Muvattupuzha. The session was chaired by Dr. Kiron SS, Professor of Pharmacy Practice, Govt. Medical College Kannur, and moderated by Dr. Shamna MS, Assistant Professor of Pharmacy Practice, Govt. Medical College Kottayam.

The workshop on "Basic Life Support" was conducted by Dr. Shajeer KP, HOD Emergency Medicine, Department of Lisie Hospital, Kochi. The steps involved in PCR were demonstrated in an explicit manner. Various life support methods for cardiac shock and choking conditions were explained.

The next session on “Regulatory Updates in Community Pharmacies” was delivered by Dr.PK Sreekumar, former Deputy Drugs Controller, Kerala State. The session was chaired by Mr. Pradeep, former Deputy Drugs Controller, Kerala State, and moderated by Dr. Siby Joseph, Professor of Pharmacy Practice, St. Joseph’s College of Pharmacy, Cherthala.

A panel discussion was conducted on the topic A Way Forward: Patient Counseling Services. Mr. MP George, Former Drugs Controller, Kerala State, chaired the session, which was moderated by Dr. David Paul, Associate Professor, St. James College of Pharmaceutical Sciences, Chalakkudy. Mrs. Manju CS, Associate Professor of Pharmacy Practice, Govt. Medical College Kozhikode presented her experience in starting a pharmaceutical care center at Govt. Medical College Hospital, Kozhikode, and the implementation of patient counseling services. There was an active discussion, and the participants shared their experiences and put forward novel ideas to improve patient counseling. In the evening, the participants of the 4th batch of the Train the Trainer program were given Certificates of Participation with CPE points. The five best performers are Mrs. Nisha AR, Ms. Rincy Mariyam Varghese, and Mrs. Saraswathi K. Ms. Mamtha M. and Ms. Gayathri Meenakumari were honored at the gathering. The Chief Guest, Rev. Fr. (Dr.) Paul Karedan, Chief Executive Trustee, Lisie Medical Institutions, inaugurated the workshop. In the inaugural address, he appreciated the professional service rendered by IPA in promoting patient counseling. He said that patient counseling is the only way for pharmacists to get closer to the public and earn professional recognition as frontline pharmacists. Dr. Jinu Isaac, Principal, Lisie College of Pharmacy Kochi, welcomed the gathering. Dr. P. Jayasekhar, President of the IPA Kerala State Branch, presided over the inaugural ceremony. He informed me that 250 working pharmacists were part of the “Train the Trainer program{ on patient counseling,” and most of them started patient counseling at their workplace. Mr. Shisi A, Treasure, IPA, proposed a vote of thanks.

World Pharmacist Day Celebration 2023 at Fathima College of Pharmacy Kollam

Indian Pharmaceutical Association, Kerala State Branch Jointly with the Alumni Association of Fathima College of Pharmacy, Kollam organized World Pharmacist Day 2023 celebrations on the theme “Pharmacists strengthening health systems” Sri M. Noushad, a Member of the Legislative Assembly, was the Chief Guest who inaugurated the celebration, and he emphasized the need for a proactive role of pharmacists in the health system. He said the service of pharmacists is not well known to the public, and such celebrations will focus on the achievements of the pharmacy profession. Adv. Shri. K P Anilkumar, Chairman, Overseas Development Employmnet Promotion Corporation (ODEC

Ltd.), was the Guest of Honor, and he said that ODEPC would try to find overseas employment and higher education for the pharmacists. The chief guest honored Sri. S.S. Venkitakrishnan, Former Drugs Controller, Kerala State, with the "IPA Pharm Excellence Award 20323," and Shri. Azad Rahim, Chairman, Fathima College of Pharmacy, with a Lifetime Achievement Award.

Mr. Shisi A, Treasurer, of the IPA Kerala State Branch, welcomed the gathering, and Dr. P. Jayasekhar, President, of the IPA Kerala State Branch, chaired the function. The World Pharmacists Day message was delivered by Shri. Jyothikumar M., Assistant Drugs Controller, Kollam. Sri. Riyas VJ, Executive Member, State Pharmacy Council, and Shri. Noushad Younu, Vice Chairman, Younus College of Engineering & Technology, Shri. Sooraj Ravi, General Secretary, KPCC, offered felicitations. Mrs. Vineetha Jayakrishan, the principal, proposed a vote of thanks. This was followed by a panel discussion on "Generic vs. Branded Prescriptions and the NMC Guidelines."Shri. KG Anil Kumar, Life Member, IPA Kerala State Branch, chaired the panel, and Mr. G. Biju, President, Press Club, Kollam, was the moderator. The panelists were Dr. D. Sreekumar (Deputy Medical Supervisor, NS Co-operative Hospital, Kollam), Dr. Moniveena M.G. (Drug Inspector, Kollam), and Shri. S. Suseelan Nair (Chief Pharmacist, Sabari Medicals Group). Shri. G.R. Vigeesh Kumar (Pharmacist Entrepreneur, Maruti Medicals, Neyyattinkara)

This was followed by another panel discussion on "Tackling Anti-Microbial Resistance," chaired by Dr. Anuroop Shankar, RMO, Govt. District Hospital, Kollam, and Dr. Abhirama BR, Prof. Head Dept. of Pharmacy Practice, Dale View College of Pharmacy & Research, Thiruvananthapuram. The panelists were Sri Anil Kumar B, Drugs Inspector, Kollam; Smt. Elizabeth Saji (General Secretary, ORMACHEPPU AlunaFathima College of Pharmacy P); and Smt. Vineetha S (Principal, Fathima College of Pharmacy, Kollam). Both the panel discussions were very active and proposed doable suggestions to resolve the concerns and issues.

World Pharmacist Day Celebration 2023 at Kochi

Chief Guest Hon. Justice Shri. Abraham K Mathew, inauguating the WPD 2023 at Chemist College of Pharmaceuitlca Scicen Research Ernakulam

The auspicious event of 'World Pharmacist Day Celebration 2023' was jointly organized by the Indian Pharmaceutical Association, Kerala State Branch, and the All Kerala Chemists and Druggists Association at Chemists College of Pharmaceutical Sciences and Research Ernakulam on September 25, 2023. Every year on September 25, World Pharmacist Day is commemorated with the goal of highlighting and advocating the pharmacist's contribution to health improvement. Dr. John Joseph, Hon. Secretary of the IPA Kerala State Branch, welcomed the inaugural session. Dr.P. Jayasehar (President, IPA Kerala State Branch and Retd. Drugs Controller, Kerala) delivered the presidential address by focusing on the roles and responsibilities of pharmacists to mankind. The program was inaugurated by the Chief Guest, Honourable Justice Shri. Abraham K. Mathew, Chairman of Kerala State Farmer's Debt Relief Commission, who appreciated the salient role of pharmacists in the health care team and remarked that the noble service of pharmacists is not noted by the public or policymakers. He urged pharmacists to come forward to project the significant role of pharmacists in providing quality medicines at affordable costs. Dr. P. Balagopal, Medical Superintendent Kochi Cancer Research Centre, Kalamassary, and Mr. Saju John, Deputy Drugs Controller, Kerala State, were the guests of honor, and they spoke on the significant role of pharmacists in the health care system.

The Chief Guest presented the Pharma Excellence Awards 2023 to Dr. Sister Betty Carla, Director, St. Joseph's College of Pharmacy, Cherthala, for Education, and that industry was presented to Shri L. S. Shenoy, Former Senior Manager, KSDP. Shri. Jamsheer Hamza, MD, Reyada Medical Centre, UAE, received the Young Entrepreneur Award from the Chief Guest. Mr. PK Harikumar, former senior manager of Kerala State Drugs &Pharmaceuticals Ltd., Alappuzha, and Dr.John Joseph introduced the awardees and highlighted their contributions to the profession and society. Mr. MP George, former drugs controller and vice president of IPA, delivered the WPD message. Shri. A.N. Mohan, President, AKCDA; Mr. NS Alexander, former Deputy Drugs Controller; Dr. R. Mahalakshmy, Drugs Inspector, Ernakulam; and Shri. Jamsheer Hamza gave felicitations on the occasion.

Dr. P. Jayasekhar and Mr. AN Mohan presented the token of gratitude to chief guest Dr. John Joseph, and Mr. MP George presented a memento to the Guest of Honor. The program was concluded by a vote of thanks delivered by Dr. Vijayaraghaven. Pricnipa Chemists College of Pharmaceutical Science and Research

There was a panel discussion on the topic "Generic V/S Branded Prescriptions and the NMC Guidelines," led by Mr. NS Alexander, former deputy drug controller, and Shri. A.N. Mohan, President, of AKCDA. The distinguished panelists were: Dr. Joy Joseph, IMA Representative; Smt. Gladys P. Kachappilly, Drugs Inspector Ernakulum; Dr. Srielakshmi, Clinical Pharmacologist; and Apollo Adlux. It was an interactive decision, and the panel came to the conclusion that generic prescriptions of medicines would be promoted with stringent monitoring from the enforcement department to ensure the quality of medicines on the market.

The second panel discussion about "Academia-Industry Interaction: was chaired by Dr.Sabitha M. (Principal, Amrita School of Pharmacy) and moderated by Mrs. Neeba Babu, Assoc. Prof. Department of Pharmaceutics, CCPSR. The panelists were Mr. P. K Harikumar, Former Production Manager, KSDP Ltd.; Mr. M. R. Pradeep, CEO, Pharma First; Dr. Fels Saju, Asso. Prof. of Pharmaceutics, Nirmala College of Pharmacy Muvattupuzha; Dr. Boby Johns G. Professor of Pharmacy, St. Joseph College of Pharmacy Cherthala; and Mr. Shri.Saji Jose, Managing Director, EssbrainsPharma Pvt Ltd., Kochi. The outcome of the discussion is to have a proactive approach from the colleges to have meaningful collaboration with the industry for student training and faculty-industry expert exchange programs. It was also proposed to have research collaborations in certain areas of mutual interest.

Answer key for the Practice Quiz
1.A; 2.C; 3.A;4.C;5.A;6.A: 7. B; 8. B; 9. A;10. A

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Frontline PHARMACISTS

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